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Application Note

Wheel Sensor iCWPTA Operation and License

Company Confidential
Commercial-in-Confidence



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1 INTRODUCTION

This application note gives an overview about how to operate the iCWPTA¹ Wheel Sensor on a car on public roads.

Such wheel sensor consists on an angular encoder and a mounting setup. It is working similar to a “PeiselerTM Wheel”, but it does not need an extra wheel and uses one of the the wheels of the car itself. The CWPTA wheel sensor can be operated directly with iMAR’s iNAT INS/GNSS series for precise vehicle trajectory surveying in GNSS distorted or denied environment like urban canyons.

The CWPTA can be operated on public roads in Germany without any additional license. This makes the usage most simple. The approval is given in the following chapter.




Figure 1: Wheel Sensor to measure vehicle’s speed precisely

Such wheel sensor shows e.g. following technical data:

- 1000 pulses per revolution
- Up to 300 kHz output frequency
- A/B Counter (quadrature signal)
- 5 ... 30 V DC Supply Voltage
- 2.5 V differential (RS422 level), compatible with all iNAT and iTraceRT systems
- IP 67

¹ The iCWPTA sensor is based on a product manufactured by Kistler AG, modified with a specific connector by iMAR to fit to all iNAT and iTraceRT-MVT systems.

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2 INSTALLATION

Install the iCWPTA wheel sensor on the car as described in the product manual.


Assure, that the cables are secured as required. Mount the device in a way, that it will not “fly away” according to the general rules of securing any other payloads on the car.

Apply a suitable marking (red flag) to signalize the payload.

E.g. do not apply the vacuum mounting feet on the cover of the tank.



Figure 2: Fix the vacuum cup mountings on rigid surface (not e.g. on the tank cover)

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3 APPROVAL / LICENSE

For operation in public traffic on a standard car the TÜV-SÜD (German Certified Testing Organization, located in Garching / Germany) gave the following statement at July 18, 2017:

„Das System ist nicht zulassungsrelevant und kann auch nicht zugelassen werden, da nicht fester Fahrzeugbestandteil.

The system is not relevant for approval for the car and cannot be licensed for a car, as it is not a fix part of the vehicle.

Das System ist nur rudimentär befestigt und am ehesten mit üblicher Ladung vergleichbar (ähnlich wie ein verlängerter Außenspiegel).

The system is only marginally fixed and hence comparable with common cargo (similar to an extended exterior mirror, as used if a trailer is pulled).

Nichtsdestotrotz ist beim Einsatz die "Straßenverkehrs-Zulassungs-Ordnung (StVZO) § 30 Beschaffenheit der Fahrzeuge" zu beachten, d.h.:

Nevertheless the laws (StVZO § 30 State of Vehicles) have to be followed:

Fahrzeuge müssen so gebaut und ausgerüstet sein, dass

Vehicles have to be built and equipped in that way, that

1. ihr verkehrsüblicher Betrieb niemanden schädigt oder mehr als unvermeidbar gefährdet, behindert oder belästigt,

1. its traffic-common operation will harm nobody or will jeopardize, impede or disturb nobody more than unavoidable,

2. die Insassen insbesondere bei Unfällen vor Verletzungen möglichst geschützt sind und das Ausmaß und die Folgen von Verletzungen möglichst gering bleiben.

2. the occupants are protected against injury especially during accidents and that the consequences of injuries will be as small as possible.


Conclusion:

The operator is responsible to assure the safe operation of the device on the car by mounting and marking. A special approval / license is not required for the usage in public traffic on a car, which keeps the general operation license.

In other countries than Germany the legal base has to be checked by the operator.

iMAR Navigation cannot be held responsible for any impact or damage caused by the usage of the system. The sole responsibility lies with the operator.

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SUPPORT

3.1 Asking for Support

For our support management system, we need to know the project number (Proj.No.) or alternatively P/N and S/N of the system you are speaking about.

These numbers are for example provided on the type plate (example shown in the Fig. on the right side).



Figure 3: Example of iMAR type plate

3.2 Contact

You can find general information about our products, used technologies, and about inertial navigation, and GNSS based navigation at www.imar-navigation.de.

You can reach iMAR Customer Support as follows:

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